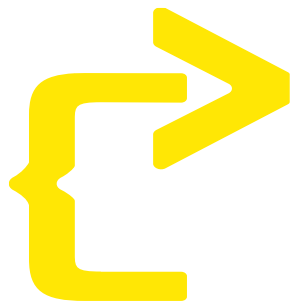


Scaling CoolThink@JC: International benchmarking of computational thinking education in primary schools

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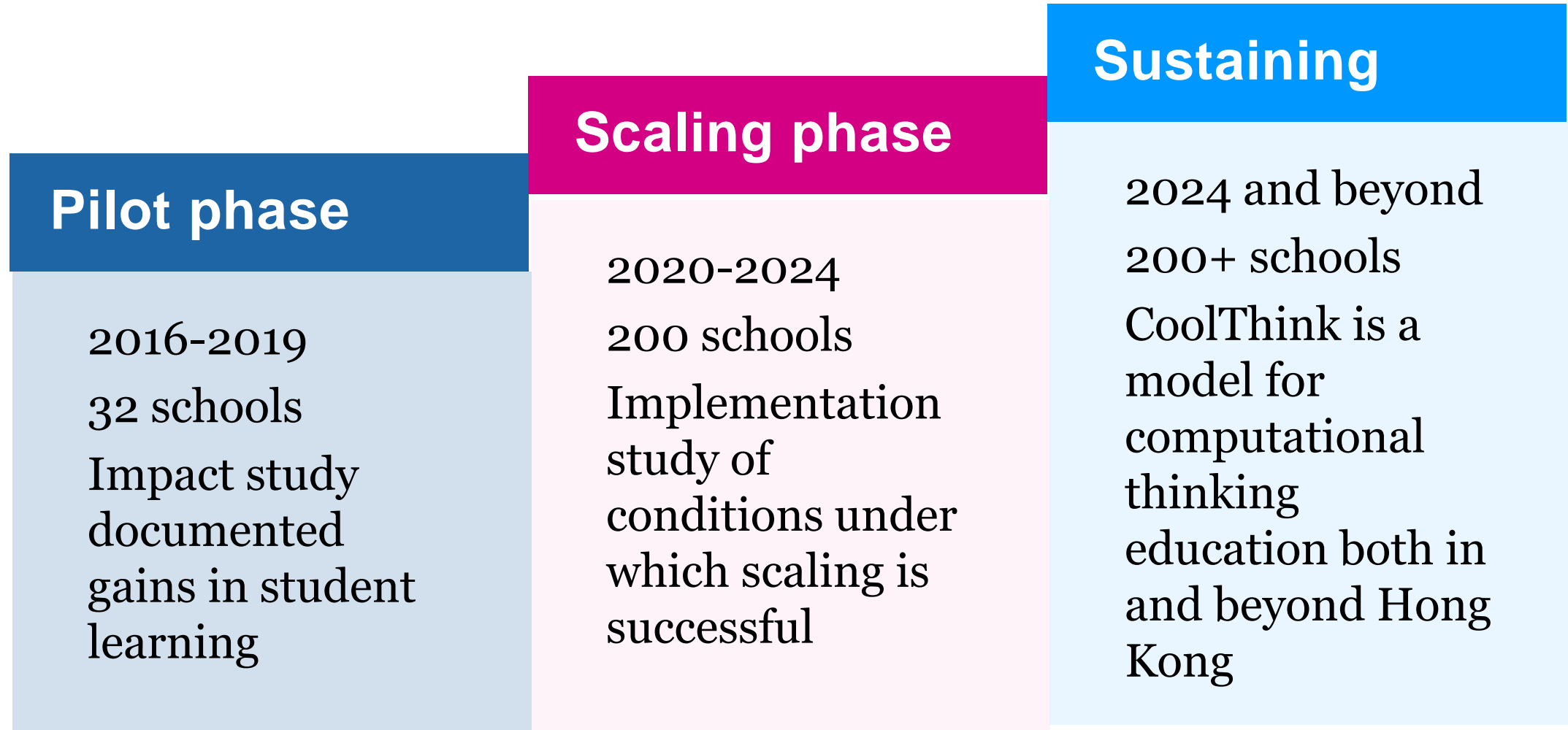




CoolThink@JC: Digital creativity for all students

We nurture students' proactive use of technologies for social good from a young age, ensure equitable access to 21st century skills, and mainstream computational thinking education in Hong Kong's formal curriculum. In collaboration with local educators and the world's leading experts, *CoolThink@JC* empowers teachers and provides them with high-quality teaching materials, learning platforms, and professional development programmes. **The CoolThink approach prepares students for a fast-changing digital future through a hands-on, minds-on, and joyful learning experience.**

Scaling computational thinking education with CoolThink@JC



CoolThink@JC global benchmarking exercise

- **Why benchmarking?**
 - Understand how CoolThink@JC compares to other global leaders in computational thinking education (CTE)
 - Identify unique features of CoolThink@JC and areas for future focus
- **Benchmarking jurisdictions:**
 - United Kingdom
 - Singapore
 - Guangzhou & Shenzhen, China
 - United States (selected examples)
- **Data sources:** Publicly available reports, peer-reviewed articles, policy documents, curriculum frameworks, and government web sites

Benchmarking key take-aways

- Global leaders **prioritize computational thinking** over other skills in technology education at the primary level
- National governments use **strategic plans, curriculum frameworks, and other guidance** to communicate priorities for CTE
- Leading benchmark jurisdictions offer **comprehensive and sustained professional development** for in-service teachers that can be delivered at scale

LESSONS LEARNED FROM BENCHMARKING JURISDICTIONS

- Successful re-branding of technology education at the primary level in Singapore and the UK
- National strategic goals for artificial intelligence (AI) as a driver of innovation in Guangzhou and Shenzhen
- Significant increases in funding for teacher development in the UK after early adoption of the national curriculum faltered
- Importance of teacher associations and teacher networks in the US

Distinctive features of CoolThink@JC

- CoolThink@JC is built on a **fully articulated course sequence and set of curriculum materials**, with **aligned professional learning**, which helps to ensure that all students experience high-quality CT instruction

UK	Singapore	Guangzhou
No investment in materials development until 2020; teachers relied on a patchwork of commercial vendors and teacher-created materials; as a result, some did not teach computing at all	Schools choose instructional materials and associated technology from approved vendors, ensuring alignment with school-based curriculum, but leading to variation among schools	Textbook on artificial intelligence developed by the Guangzhou Institute of Educational Research requires teachers to select from the wide range of units and lessons offered, shifting the burden of course design to teachers

Elevating Hong Kong as a global CTE leader

- Position CoolThink as part of a **vertically aligned CTE progression** that covers the full primary and secondary spectrum
- Support development of a **Hong Kong artificial intelligence (AI) education plan** to highlight the economic importance of CTE
- Continue to **expand teacher networks and leverage teacher professional associations** to advocate for and support high-quality CTE instruction
- Benchmark jurisdictions have accepted some trade-offs between standardization/equity/quality of instruction and scaling. **Attend to these trade-offs** in Hong Kong as CoolThink scales

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